

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Original) A device for opening and closing injection nozzles in an injection moulding tool, wherein the injection nozzle comprises a nozzle member, the nozzle opening of which can be opened and closed with a needle, wherein the needle is stationarily arranged on a piston plate that is supported in a receptacle such that it can be moved in both axial directions similar to a double-action cylinder, wherein a first work chamber is formed on the side of the piston plate which faces away from the needle and a second work chamber that can be acted upon with a fluid in order to actuate the needle is formed on the opposite side of the piston plate, and wherein the needle extends outward from the second work chamber through a recess in an end element that lies opposite of the piston plate, characterized in that the second work chamber (19) is sealed in an essentially fluid-tight fashion by means of a first sealing element (22, 37) that is arranged between the inner wall of the receptacle (12) and the piston plate (17; 34, 35) and a second sealing element (32) that is arranged between the wall of the recess (31) and the needle (25) and comes in direct contact with the needle (25).

2. (Original) The device according to Claim 1, characterized in that it comprises a base plate (13), an end plate (15) and a cylinder plate (11) that is arranged between the base plate (13) and the end plate (15), wherein the receptacle for the piston plate (17; 34, 35) is arranged in the cylinder plate (11), wherein the base plate (13) seals the receptacle (12) and forms the first work chamber (18), and wherein the end plate (15) seals the receptacle (12) and forms the second work chamber (19).

3. (Original) The device according to Claim 2, characterized in that an essentially closed peripheral sealing element (22, 37) is arranged around the receptacle (12) between the base plate (13) and the cylinder plate (11).

4. (Currently Amended) The device according to Claim 2 ~~or 3~~, characterized in that the base plate (13) contains a line (23) that serves for the inflow and the outflow of the fluid and ends in the receptacle (12).

5. (Currently Amended) The device according to ~~one of Claims 2-4~~ Claim 2, characterized in that an essentially closed peripheral sealing element (32) is arranged around the receptacle (12) between the cylinder plate (11) and the end plate (15).

6. (Currently Amended) The device according to ~~one of Claims 2-5~~ Claim 2, characterized in that the end plate (15) contains a line (24) that serves for the inflow and the outflow of the fluid and ends in the receptacle (12).

7. (Currently Amended) The device according to ~~one of Claims 1-6~~ Claim 1, characterized in that the piston plate (17; 34, 35) essentially has the shape of a circular disk, and in that the recess (12) is realized complementary thereto in the form of a regular cylinder.

8. (Currently Amended) The device according to ~~one of Claims 1-7~~ Claim 1, characterized in that the piston plate (17; 34, 35) is provided with an essentially closed peripheral recess (21) in the region of its outer circumferential surface, wherein the first sealing element (22, 37) is arranged in this recess.

9. (Currently Amended) The device according to ~~one of Claims 1-8~~ Claim 1, characterized in that the first sealing element (22, 37) is realized in the form of an O-ring or an annular lip seal.

10. (Currently Amended) The device according to ~~one of~~
~~Claims 1-9~~ Claim 1, characterized in that the second sealing
element (32) is realized in the form of an O-ring or an
annular lip seal.

11. (Currently Amended) The device according to ~~one of~~
~~Claims 1-10~~ Claim 1, characterized in that a guide element (38)
for guiding the needle (25) is arranged in the recess (31) of
the end element or the end plate (15) in addition to the
second sealing element (32).

12. (Original) The device according to Claim 11,
characterized in that the guide element (38) is realized in
the form of, in particular, a bushing-shaped radial sliding
bearing.

13. (Currently Amended) The device according to ~~one of~~
~~Claims 1-12~~ Claim 1, characterized in that a fixing element
(33) is provided for fixing the second sealing element (32)
and/or the guide element (38), in particular, under a
prestress.

14. (Original) The device according to Claim 13,
characterized in that the fixing element (33) can be screwed
into the recess (31) similar to a stud screw and contains an
axially continuous recess, through which the needle (25)
extends with at least slight radial play.

15. (Currently Amended) The device according to ~~one of~~
~~Claims 1-14~~ Claim 1, characterized in that at least two needles
(25) are arranged on a piston plate (17; 34, 35).